

Colorado River Dissolved Solids TMDL
Draft Stakeholder Meeting Summary
April 12, 2004
Ballinger, TX

Stakeholders Present:

Don Horner	Texas Railroad Commission
Okla Thornton	Colorado River Municipal Water District
Skipper Wheelless	Runnels County Commissioner
Alecia Reinmund	Lower Colorado River Authority
Allen Frizzell	Enrich Oil Corporation
Tommy New	City of Ballinger
Richard Strube	Runnels County Commissioner (Precinct # 4)
Roy Blair	Coke County Judge
Ben Sims	Lower Concho River Water & Soil Conservation Authority
Patricia Sue Sims	Citizen

Stakeholders Absent:

Bud Johnson	Coke County Soil and Water Conservation District
Mike Arrott	Coke County Soil and Water Conservation District
CJ Robinson, Jr.	Runnels County Soil and Water Conservation District
Dennis McBeth	Runnels County Soil and Water Conservation District
Allen Belk	Private oil interest in Coke County
Jim Studer	Buddy's Plants Plus
Bryan Davenport	Mueller's Supply Co.
Charles Sonnenberg	Bronte City Council Member
Michael Wiede	Farm Bureau
Scott King	Principal, Ballinger Elementary School (and Elm Creek Water Control District)
Chuck Brown	Upper Colorado River Authority

Project Technical Staff:

Kerry Niemann – TCEQ Project Manager

Raed El-Farhan – Louis Berger Group
Mark Kelly – EA Engineering

Others Present:

Earlene Lambeth – TCEQ Facilitator

Earlene Lambeth of the TCEQ opened the meeting with introductions, handouts, and a survey questionnaire to assist in evaluating how effective the community-based, collaborative watershed efforts are in contributing to the protecting of Texas's natural resources. Stakeholders were encouraged to complete the form and return to the TCEQ by fax at (512) 239-1414 or by mail at PO Box 13087, MC 150, Austin, TX 78711-3087. Introductions were made around the meeting room.

Kerry Niemann began the technical presentation presenting data results for the Upper Colorado River Dissolved Solids and Chloride Impairments TMDL. A brief review of the projects' original segments that were listed on the 2000 Clean Water Act 303(d) list for chloride and Total Dissolved Solids was given. The San Gabriel River (Segment 1214) has been de-listed as well as Brushy Creek (Segment 1244) based on data and the concentration levels being below the standard criteria. The remaining segments being studied include the Colorado River below E.V. Spence Reservoir (Segment 1426) and Petronila Creek (Segment 2204). The evenings' discussion will pertain to the completed data results and summary of the Colorado River.

Mr. Niemann explained that the Non-point Source Program at the TCEQ had contracted with the Texas Railroad Commission to plug abandoned wells to eliminate potential sources of salinity within the watershed and that in FY03 115 wells had been plugged and in FY04 were projecting to plug even more. A slide was presented showing the non-compliant and injection oil wells, showing density in the watershed with a large plume in the southwestern end of Taylor County.

Another concern in the watershed is salt cedar. Mr. Okla Thornton provided TCEQ with data on the salt cedar and how that problem was being addressed. The Salt Cedar Task Force is spraying the cedar in an effort to eliminate that source of salinity in the watershed. Salt cedar secretes salt from the leaves when transpiring, water evaporates, and the salts fall to the soil. The salt concentrations secreted from leaf glands are estimated at 41,000 ppm.

The chloride constituent levels were summarized and discussed for each station being monitored in Segment 1426. The results are summarized as follows:

- Station ID 15147 (Colorado River near Robert Lee WWTP) – Geometric Mean Above Criteria
- Station ID 12432 (Colorado River at US 277 South of Bronte) – Geometric Mean Above Criteria

- Station ID 13651 (Colorado River near Ballinger) - Geometric Mean Above Criteria
- Station ID 12430 (Colorado River bridge on US 83 in Ballinger) - Geometric Mean Above Criteria
- Station ID 12431 (Colorado River bridge on US 67) - Geometric Mean Above Criteria
- Station ID 17244 (Colorado River at Blair Ranch) - Geometric Mean Above Criteria
- Station ID 16899 (Coyote Creek at CR 342) - Geometric Mean Below Criteria
- Station ID 12207 (Elm Creek at CR 330 four miles north of Ballinger) – Geometric Mean Below Criteria

The next constituent summarized and discussed was for Total Dissolved Solids (TDS). The TDS results are summarized as follows:

- Station ID 15147 (Colorado River near Robert Lee WWTP) – Geometric Mean Above Criteria
- Station ID 12432 (Colorado River at US 277 South of Bronte) – Geometric Mean Above Criteria
- Station ID 13651 (Colorado River near Ballinger) - Geometric Mean Above Criteria
- Station ID 12430 (Colorado River bridge on US 83 in Ballinger) - Geometric Mean Above Criteria
- Station ID 12431 (Colorado River bridge on US 67) - Geometric Mean Above Criteria
- Station ID 17244 (Colorado River at Blair Ranch) - Geometric Mean Above Criteria
- Station ID 16899 (Coyote Creek at CR 342) – Geometric Mean Below Criteria
- Station ID 12207 (Elm Creek at CR 330 four miles north of Ballinger) – Geometric Mean Below Criteria

During the discussions of the sampling results many items were taken into consideration for the results. Some of the items considered were rainfall events, flow from E.V. Spence Reservoir, and oil well densities. One of the stakeholders present at the meeting said that Coke County Underground Water District collected data from around the watershed on how much rain had been received in the past year(s). Another comment received was how helpful the presentation slides were showing the maps, data, and station identifications. Another stakeholder asked about the possibility of super-imposing the USGS discharge on the graphs also that were available on the Internet. Mr. Skipper Wheelless also suggested putting another monitoring station between Mustang and Elm Creek. After all the tributaries are assessed with sound representative data, it was agreed the current sampling stations would be sufficient.

Mr. Wheelless asked to read a letter that the Commissioners Court in Runnels County had received from Mr. Bill Renfro with the Texas Railroad Commission. The letter was pertaining to a federal 319 60/40-split non-point source grant that was asking for “in-

kind” service. A suggestion was made for Mr. Wheelless to contact Mr. Renfro and that he could possibly contact Ms. Sherri Serna at TCEQ, the Non-point Source Project Manager. Mr. Okla Thornton reported that CRMWD was in full support of the project mainly because it was going to address some oil wells that needed work. Ms. Reinmund with LCRA concurred.

Another item that Mr. Niemann touched on and explained that Mr. El-Farhan would be elaborating on later during the meeting was work with the Bureau of Economic Geology to conduct Electromagnetic Conductivity Surveys along the stream segment. If the study can be done, the first item would be to conduct ground surveys and then airborne surveys if data warrants it. A presentation could possibly be given to the steering committee later if indeed we will be able to follow through. Funds are trying to be identified for this study and we will know more at a later date.

Another study discussed was an aerial-electromagnetic study of the Hatchel area by the Railroad Commission and the University of Texas Bureau of Geology to identify non-compliant oil wells and salt-water injection wells. The available data from the study has been looked into and considered. Mr. Thornton was very involved in that study and was a key resource.

Mr. Niemann reported that Elm Creek and Coyote Creek were both below the standard criteria and were therefore not a source. Mr. Okla Thornton pointed out to remember to “let the data lead you”. Mr. Niemann assured the stakeholders that was exactly what would be done... “The project team can thoroughly compare data results under baseline, runoff, and storm even conditions to suspect impairment sources, specifically: 1) salt cedar; 2) groundwater migration/geology; 3) non-compliant oil & gas wells; and 4) agriculture”. Agriculture was being considered due to irrigation.

Next on the agenda was a presentation given by Mr. Raed EL-Farhan of the Louis Berger Group, Inc. He gave a brief overview of a recap from the previous meeting discussing a Total Maximum Daily Load (TMDL), Water Quality Standard, the listed segment of the Colorado River which is about 66 miles, and its’ watershed characterization. Collecting the proper data is being done to build a model that we will be able to assess the source(s) and all the issues in the entire watershed. Land use is being studied which include rangeland and agriculture. 16 water quality stations are in the watershed.

A point made by Mr. EL-Farhan is that since the water quality standards are regularly exceeded under both wet and dry weather flow conditions, and the sources of chloride and sulfate include sources that contribute to wet weather flows, a detailed model is required to determine the pollutant loads from different types of nonpoint sources and their transport mechanisms. It is important to understand “why” and the data is not always consistent during wet or dry weather periods. There are many questions and data that are being analyzed.

Some of the points made that will be necessary for the Hydrologic Simulation Program Fortran (HSPF) model will be stream flow, weather data and especially more site specific

hourly rainfall data. Sources of salinity being looked at include natural and human. Natural salinity sources include geologic formations and biological sources such as the salt cedar as an indirect source. Human sources are permitted facilities, brine pits, injection, and leaking wells. Geologic sources increase the salinity and may occur from the dissolution of naturally occurring geologic formations such as gypsum which are present in the upper portion of the Colorado River Segment 1426.

The salt cedar is very invasive and dominant in many riparian areas of the Colorado River. Salt production comes from salt that is secreted from the leaves during transpiration. The water evaporates, and the salt falls to the soil. Salt concentrations secreted from the leaves are estimated at 41,000 ppm during the growing season. No other plant can survive under salt cedar or around it due to such extreme salt secretions and it uses more water than other native plants in the area. The salt cedar invasive shrub is currently being outlawed and under contract for aerial spraying. The spraying is routinely performed for control of salt cedar infestation. The Colorado River in this segment is estimated at a massive infestation of 23,376 plants per acre. Each tree consumes approximately 78 gallons of water per day. Taking all this into consideration, the salt cedar is a major source to be considered in the watershed.

Source loadings for the Colorado watershed include data estimates to determine daily pollutant production by source, an estimate of the size and number of each source, and a determination of whether the source is direct or indirect. A calculation is made of the load to each land use based on a monthly schedule for each source. All that is considered to sum all the individual sources to equal the total load.

Well data is another source that needs to be considered in the modeling. Oil-related sources include locations of known oil field operations, wells, and brine pits in the watershed.

The watershed is a very complex system. It is not possible to discern between the various sources of salinity in the shallow or the deep subsurface. Therefore, a study is being proposed in two phases through the Bureau of Economic Geology that will assess that salinity sources contributing to the impairment of the Colorado River. The data collected through the proposed study would be used to define pollutant-loading rates for the water quality modeling. The data would be useful in the implementation of required pollutant source reductions determined from the TMDL process.

The airborne electromagnetic (EM) methods would be used to map the salinity sources in the watershed. Also, these analyses would estimate the percentages of anthropogenic and natural sources in the analyzed water samples, shallow and deep water, or salinity.

The program team will continue to analyze the data and investigate sources of salinity in the watershed. The model input parameters will be finalized and a calculation of the salinity loading from identified sources will be made. The team will be getting back with the steering committee to present the draft TMDL and hold another public meeting. Questions received during stakeholder meeting:

Question – Please define “non-compliant”?

Answer – The Railroad Commission considers wells that are leaking, not cased properly, plugged properly or abandoned to be “non-compliant”.

Question – How do you account for decline in the constituent before the actual rain event?

Answer – We suspect more water than normal was being released from E. V. Spence Reservoir and was diluting the segment. Also there is a lot of inflow from tributaries that has diluted levels.

Comment – The drought is driving most of these problems. If the levels doubled, the TMDL on this river would probably go away.

Question – Would it help to super-impose USGS flow data that is available on the web on the graph(s)?

Answer – Absolutely, we definitely will do that before we place the graphs on our web page.

Question - Sounds like you are trying to create a case that would rule out Elm Creek watershed?

Answer – Not necessarily, what the data has done, and looking at the values gathered, tentatively saying that the ambient sampling data is not a source. That however, does not mean there may not be some seeps that are contributing or dilution is occurring. We are going to farther into an in-depth study. Data will lead us and we will access the tributaries in that area.

Question -What do you mean by “agriculture”?

Answer – Recent meetings with the Bureau of Economic Geology (BEG), and their study of the Hatchel area in the middle of Runnels County, indicates that there is some agriculture (through irrigation) that is contributing to the chloride & TDS levels.

Question – Is there some correlation between the runoff and the salt cedar, maybe a time of year that the salt cedar may put off more salt?

Answer – We are looking at that through the TMDL. Is it a surface issue or sub-surface issue? The more we are looking into the data and issues; we believe it might be a combination. There are many items to be studied with the salt cedar, rainfall and source loadings.

Question – How much money do you have for this EM study?

Answer – We have asked for management to consider this in the budgeting process. We do not have approval but we are hopeful.

QUESTIONNAIRE

Watershed Project / Group Case Study

The overall purpose of this questionnaire is to evaluate how effective community-based, collaborative watershed efforts are in contributing to the protection and enhancement of Texas's natural resources. The State's interest is to empower its citizens to help achieve the State's resource management objectives.

Name (can be left blank):

Title: _____

Date: _____

How effective is this group / effort in protecting and enhancing the watershed?

1. What successes has this group had?

2. What are its strengths?

3. What failures, if any, has it had?

4. What are its weaknesses?

5. If there were things that could make a difference, what would they be?

6. Are you satisfied with your local group function and is it effective in protecting and enhancing the watershed?

7. How good is the current relationship with agencies: federal, state, local?

8. Most proud accomplishments of the group?

9. Expected longevity of group (as long as needed, as long as funded, until projects done, etc.)